



**Brindle
&Green**

Biodiversity Impact Assessment

Royd Moor Farm, Royd Moor Road
Thurlstone, Sheffield, South Yorkshire
Report Reference: BG22.227
June 2024



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1 Summary

- 1.1.1 Where a development has an impact on biodiversity, Biodiversity Net Gain encourages developers to secure an increase in appropriate natural habitat and ecological features over and above that being affected. In order to determine whether there is no net loss or a net gain to biodiversity from a development project, a quantitative approach involving the use of a metric is required. In 2012, DEFRA created such a metric to quantify the impact of a development in terms of 'biodiversity units'. The UK government's 25 Year Environment Plan will require all new developments in England, delivered via the existing planning and development process to meet a mandatory improvement in biodiversity value.
- 1.1.2 This Biodiversity Impact Assessment (BIA) draws upon the results of the updated Preliminary Ecological Appraisal BG22.227 Royd Moor Farm, Thurston (June, 2024). This assessment includes the results of biodiversity value calculations, derived using the Natural England Statutory Biodiversity Metric Calculator, based upon the design proposals for the application site.
- 1.1.3 During the baseline assessment the habitats recorded comprised a series of farm buildings set upon handstanding with patches of poor semi-improved grassland located to the north and west. A treeline was recorded on the northern and western boundaries. The habitats on site were evaluated as holding 'Site' value in relation to local surroundings and a regional context. Habitats present within the application boundary are locally frequent and were not of notable criteria for local or national BAP habitats. The condition of baseline on site were assessed as 'Poor' to 'Moderate' condition when assessed against the criteria outlined within the technical supplement for the Statutory Biodiversity Metric. The habitats were recorded using the Phase 1 habitat survey methodology and were translated into the UK habitats classifications for the purposes of the biodiversity metric.
- 1.1.4 Using the Biodiversity metric, the existing habitats within the application boundary were valued at 0.38 'Habitat Units', and 0.1 'Hedgerow Units'. The proposed scheme with proposed offsite habitat creation was calculated to hold 0.18 'Habitat Units', and 0.16 'Hedgerow Units', resulting in an overall net-gain to biodiversity of 0.18 'Habitat Units' (+46.27%), and a net-gain of +0.16 'Hedgerow Units' (+159.09%).

- 1.1.5 These calculations include a strip of habitat within the blue line boundary along the western boundary to include a new hedgerow in order to demonstrate a net gain to hedgerow units as well as creation of additional modified grassland.
- 1.1.6 The calculations within the associated Metric (BG22.227 Royd Moor Farm, biodiversity Metric – FINAL) meet the mandatory requirement of a 10% net gain to biodiversity as set out within Schedule 7A of the Town and Country Planning Act 1990 (as inserted by Schedule 14 of the Environment Act 2021). All trading rules have been satisfied.
- 1.1.7 The report should be reviewed in conjunction with the updated Preliminary Ecological Appraisal letter BG22.227 (June 2024) and the accompanying Metric (BG22.227 Royd Moor Farm – Statutory Metric - FINAL).

2 Introduction

- 2.1.1 Brindle and Green Ltd were commissioned by Emma Hanks on behalf of Kingsman Homes Ltd to undertake a Biodiversity Impact Assessment (BIA) at the site known as Royd Moor Farm, Thurlston, Sheffield, South Yorkshire. This report provides an appraisal of the biodiversity value associated with the existing habitats established during the baseline survey and assesses the impacts in terms of biodiversity loss against the proposed layout (Appendix 1) using the Natural England Statutory Biodiversity Metric which is considered the most up to date method for assessing impact to biodiversity. The site is the subject of a full planning application for demolition of farm buildings and additional vegetation clearance to facilitate the development of eight dwellings. Design proposal can be found within Appendix 1 of this report.
- 2.1.2 The application site is approximately 0.6ha in extent and comprises a farmstead of 14 buildings and associated hardstanding with patches of semi-improved grassland located to the north and west of the site. The site supports a tree line along the northern and western boundaries. The site is located approximately 1km west of the rural village of Thurlston and is bordered by extensive agricultural land with Royd Moor Road running along the northern boundary.
- 2.1.3 The design proposals will facilitate the loss of 0.41ha of existing developed land, 0.021ha of ruderal/ephemerals, 0.016ha of tall forbs and 0.126ha of modified grassland. Approximately 50m of tree line on the northern boundary is also proposed for removal.
- 2.1.4 The purpose of this report is to assess the current biodiversity habitat and value of the site, so as to reduce net-loss as a result of the development, and preferably, a net-gain in biodiversity value.
- 2.1.5 Results and recommendations contained within this report have been prepared by an experienced ecologist and are therefore the view of Brindle & Green Limited. The results of the Biodiversity Impact Assessment are based on information provided by our client and the updated ecological appraisal (BG22.227, June 2024). This report pertains to this information only.

3 Methodology

3.1 Biodiversity Metric

- 3.1.1 The biodiversity accounting system is underpinned by a metric that calculates the ecological value of both development impact and habitat restoration/creation.
- 3.1.2 The Biodiversity Metric is designed by Natural England in consultation with a range of experts and tested over a two-year period. The metric is based on an assessment of habitat type and condition. Habitat types are classified into three bands of 'distinctiveness' which are: priority habitats as defined in the NERC Act 2006 (high), semi-natural habitats (medium) and managed habitats, such as arable farmland (low).
- 3.1.3 Compensation arrangements must be like-for-like or better, i.e. the loss of semi-natural habitats can only be compensated for through the creation of priority or other semi-natural habitats, not through creation of lesser quality habitat. 'Trading up' options allow for the loss of poor-quality habitat, such as farmland, to be compensated for with the creation of high-quality habitat.
- 3.1.4 The ecological value of the habitat lost to development is a function of its distinctiveness, its condition and the area lost – scores are assigned to all three variables and multiplied together to arrive at the number of units lost. To compensate for a loss, the same or more units ('conservation credits') must then be delivered through habitat creation or restoration at another site that is going to be managed for wildlife (the 'receptor' site or compensation site).
- 3.1.5 The number of credits delivered by the compensation receptor sites are also a function of the type, condition and area of the habitat being created or restored. But additionally, there are a further range of 'multipliers' applied to the creation of habitat because there are a number of risks to take account of – spatial, temporal and delivery.
- 3.1.6 Linear habitats (such as hedgerows) are measured separately to the rest of the site habitats and included within a separate section – hedge baseline and hedge creation. The aim is to achieve a 10% net-gain for hedgerow units as well as for biodiversity units.

3.2 Mapping and Assessment

- 3.2.1 An updated phase 1 habitat walkover survey was carried out by Brindle and Green Ltd (BG22.227, June 2024); for the baseline calculations the habitats were mapped using the updated

phase 1 map and condition assessed using the criteria outlined within the Statutory Biodiversity Metric habitat condition assessment sheets. The phase 1 habitats were translated into the UKHab classification system to input into the metric. The classification of habitats and conditions follow the outline in the Natural England Technical Support document associated with the latest edition of the metric.

- 3.2.2 Habitats and hedges were mapped within QGIS software to allow area calculations. The proposed scheme was overlaid and measured using the georeferencing tool. Polygons and lines used to measure existing habitat areas were classified by their proposed habitat type (Appendix 3), to provide reference. Polygons depicting target areas for net gain are also included within Appendix 3. These target areas include grassland enhancements and proposed hedge laying in areas of open space and enhancing the available space provided by the drainage feature.
- 3.2.3 Proposed housing and access were categorised as developed land sealed surface and proposed residential gardens were grouped into the category of “Urban – vegetated garden”. These areas will be outside the control of any long-term habitat management scheme, and this will likely be the most prevalent habitat type within these areas.
- 3.2.4 The proposed layout does not include any open space for habitat creation as such an area within the blue line boundary is to be used for offsite habitat creation through increasing cover of grassland and introduction of a native hedgerow.

3.3 Assessing Strategic Significance

- 3.3.1 A desk study utilising publications within the local plan (LPA) as well as open-source data available from Multi Agency Geographic Information for the countryside (MAGIC) was searched to determine the strategic significance of the site.

3.4 Limitations

- 3.4.1 It should be noted that whilst every effort has been made to provide a comprehensive description of the site, no investigation could ensure the complete characterisation and prediction of the natural environment.
- 3.4.2 Georeferencing does not provide an exact measurement of the elements of the proposed scheme.

4 Assessment Calculator Results

4.1 Existing Biodiversity Value

- 4.1.1 The application site contains habitats ranging from low to moderate distinctiveness. Details of distinctiveness, condition and reason for condition are detailed within Table 1 below.

Table 1: Summary of condition assessment for habitat, hedge and river baseline.

Habitat	Distinctiveness	Condition	Reason
Developed Land-Sealed Surface (0.41ha)	Very low	N/A	N/A
Ruderal/Ephemeral (0.021ha)	Low	Moderate	Passes 2 of 3 condition assessment criteria
Tall Forbs (0.016ha)	Low	Poor	Passes 1 of 3 condition assessment criteria
Modified Grassland (0.12ha)	Low	Poor	Fails essential criterion A
Modified Grassland (0.006ha)	Low	Moderate	Passes criterion A plus 4 additional criteria
Offsite Habitats			
Developed Land-Sealed Surface (0.012ha)	Very Low	N/A	N/A
Modified grassland (0.03)	Low	Poor	Fails essential criterion A
Hedge			
Line of Trees (50m)	Low	Poor	Passes 1 condition assessment criteria
Offsite Hedges			
Line of trees (36m)	Low	Poor	Passes 1 condition assessment criteria

- 4.1.2 The total area of the habitats within the red and blue line boundary to be impacted is 0.62ha. The existing habitats within the redline boundary were valued at 0.38 'Habitat Units' and 0.1 'Hedgerow Units'. The baseline of the areas within the blue line boundary is 0.06 habitat units and 0.07 hedgerow units.

4.2 Scheme Design with Ecological Enhancements

- 4.2.1 The proposed scheme is for site clearance to facilitate the residential development of eight new dwellings and associated access and gardens. No open space for habitat creation is proposed within the redline boundary. As such habitat within the blue line boundary is proposed for biodiversity offsetting.
- 4.2.2 The results in Table 2 below show the scores calculated with maximised potential of planted habitats within this space. The recommendations outlined in the section would require management under a Habitat Management and Monitoring Plan (HMMP) in order to achieve their target conditions outlined within the metric calculations.
- 4.2.3 Appendix 3 highlights a series of areas of habitats to be created. A singular area of modified grassland – poor condition is proposed within the blue line boundary in addition to the inclusion of a native hedgerow within this area which sits along the western boundary. The grassland should be seeded with Emorsgate EM1 grassland or similar approved.

Table 2: Biodiversity Impact Assessment Score, Scheme with Ecological Enhancements

Royd Moor Farm

Headline Results

Scroll down for final results

Return to results menu

On-site baseline	Habitat units	0.38		
	Hedgerow units	0.10		
	Watercourse units	0.00		
On-site post-intervention (Including habitat retention, creation & enhancement)	Habitat units	0.53		
	Hedgerow units	0.00		
	Watercourse units	0.00		
On-site net change (units & percentage)	Habitat units	0.15	40.18%	On-site net gain is less than target set A
	Hedgerow units	-0.10	-100.00%	
	Watercourse units	0.00	0.00%	
Off-site baseline	Habitat units	0.06		
	Hedgerow units	0.07		
	Watercourse units	0.00		
Off-site post-intervention (Including habitat retention, creation & enhancement)	Habitat units	0.08		
	Hedgerow units	0.33		
	Watercourse units	0.00		
Off-site net change (units & percentage)	Habitat units	0.02	38.60%	
	Hedgerow units	0.26	359.85%	
	Watercourse units	0.00	0.00%	
Combined net unit change (Including all on-site & off-site habitat retention, creation & enhancement)	Habitat units	0.18		
	Hedgerow units	0.16		
	Watercourse units	0.00		
Spatial risk multiplier (SRM) deductions	Habitat units	0.00		
	Hedgerow units	0.00		
	Watercourse units	0.00		

FINAL RESULTS

Total net unit change (Including all on-site & off-site habitat retention, creation & enhancement)	Habitat units	0.18
	Hedgerow units	0.16
	Watercourse units	0.00
Total net % change (Including all on-site & off-site habitat retention, creation & enhancement)	Habitat units	46.27%
	Hedgerow units	159.09%
	Watercourse units	0.00%
Trading rules satisfied?	Yes	

Unit Type	Target	Baseline Units	Units Required	Unit Deficit
Habitat units	10.00%	0.38	0.42	0.00
Hedgerow units	10.00%	0.10	0.11	0.00
Watercourse units	10.00%	0.00	0.00	0.00

No additional area habitat units required to meet target

No additional hedgerow units required to meet target

No additional watercourse units required to meet target

5 Evaluation

Development Proposals

- 5.1.1 The site is the subject of a full planning application for site clearance to facilitate the residential development of eight dwellings and associated access and gardens. Current design proposals for the site are presented in Appendix 1 of this report.
- 5.1.2 Using the Biodiversity metric, the existing habitats within the application boundary were valued at 0.38 'Habitat Units' and 0.1 'Hedgerow Units'. The proposed scheme combined with proposed offsite habitat creation was calculated to hold 0.61 'Habitat Units' and 0.33 'Hedgerow Units' , resulting in an overall net-gain to biodiversity of 0.18 'Biodiversity Units' (46.27%), 0.16 'Hedgerow Units' (159.09%). Trading rules have also been satisfied. If proposals are to be fixed based upon this assessment the site meets the mandatory 10% net gain requirement as set out within Schedule 7A of the Town and Country Planning Act 1990 (as inserted by Schedule 14 of the Environment Act 2021).

6 Ecological Management Prescriptions

- 6.1.1 The proposed habitat creation of a hedgerow and modified grassland will require long-term management and monitoring under a Habitat Management and Monitoring Plan (HMM), secured as a planning condition. The below section provides details of proposed habitat requirements to inform any soft landscaping proposals to be created.

6.2 Creation of habitat along western boundary

Modified Grassland – Poor Condition

- 6.2.1 Areas of open space detailed within Appendix 3 will be seeded with Emorsgate EM1 seed mix or similar approved and managed in line with existing grassland along the western boundary. The target criteria are indicated below.

Table 3: Condition Assessment Criteria for 'Modified Grassland'

GRASSLAND Habitat Type (low distinctiveness)	
A	There are 6-8 vascular plant species per m2 present, including at least 2 forbs (these may include those listed in Footnote 1). Note - this criterion is essential for achieving Moderate or Good condition. Where the vascular plant species present are characteristic of medium, high or very high distinctiveness grassland, or there are 9 or more of these characteristic species per m2 (excluding those listed in Footnote 1), please review the full UKHab description to assess whether the grassland should instead be classified as a higher distinctiveness grassland. Where a grassland is classed as medium, high, or very high distinctiveness, please use the relevant condition sheet.
B	Sward height is varied (at least 20% of the sward is less than 7 cm and at least 20% is more than 7 cm) creating microclimates which provide opportunities for vertebrates and invertebrates to live and breed.
C*	Any scrub present accounts for less than 20% of the total grassland area. (Some scattered scrub such as bramble <i>Rubus fruticosus</i> agg. may be present). Note - patches of scrub with continuous (more than 90%) cover should be classified as the relevant scrub habitat type.
D*	Physical damage is evident in less than 5% of total grassland area. Examples of physical damage include excessive poaching, damage from machinery use or storage, erosion caused by high levels of access, or any other damaging management activities.
E*	Cover of bare ground is between 1% and 10%, including localised areas (for example, a concentration of rabbit warrens).
F*	Cover of bracken <i>Pteridium aquilinum</i> is less than 20%.

G*	There is an absence of invasive non-native plant species (as listed on Schedule 9 of WCA).
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*indicates target criteria

Native Species Hedgerow – Moderate condition

6.2.2 A native hedgerow should be planted on the western boundary. The hedgerow will support native, fruit producing species such as hazel (*Corylus avellana*), hawthorn (*Crataegus monogyna*), blackthorn (*Prunus spinosa*). The target criteria have been indicated below to achieve 'Moderate' condition.

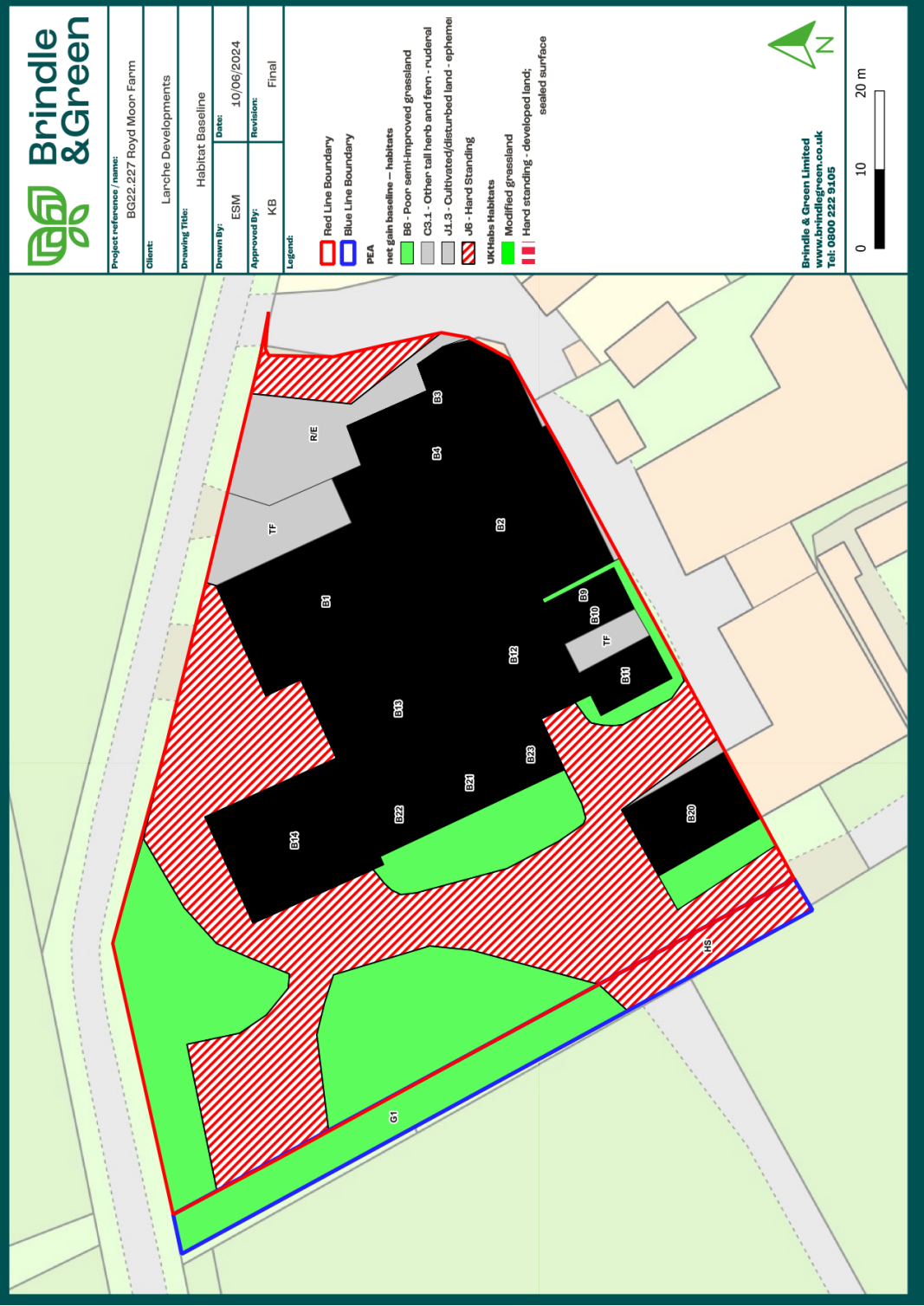
Table 4: Condition Assessment Criteria for 'Hedgerow'

Hedgerow	
A1*	Height: >1.5 m average along the length
A2	Width: >1.5 m average along the length
B1	Gap – hedge base: Gap between ground and base of canopy <0.5 m for >90% of length
B2*	Gap – hedge canopy community: Gaps make up <10% of total length; and no canopy gaps >5m
C1*	Undisturbed ground and perennial vegetation: >1m width of undisturbed ground with perennial herbaceous vegetation for >90% of length. Measured from outer edge of hedgerow. Is present on one side of the hedgerow (at least).
C2	Nutrient-enriched perennial vegetation: Plant species indicative of nutrient enrichment of soils dominate <20% cover of the area of undisturbed ground.
D1*	Invasive and neophyte species: >90% of the hedgerow and undisturbed ground is free of invasive non-native plant species (including those listed on Schedule 9 of WCA) and recently introduced species.
D2*	Current damage: >90% of the hedgerow or undisturbed ground is free of damage caused by human activities.

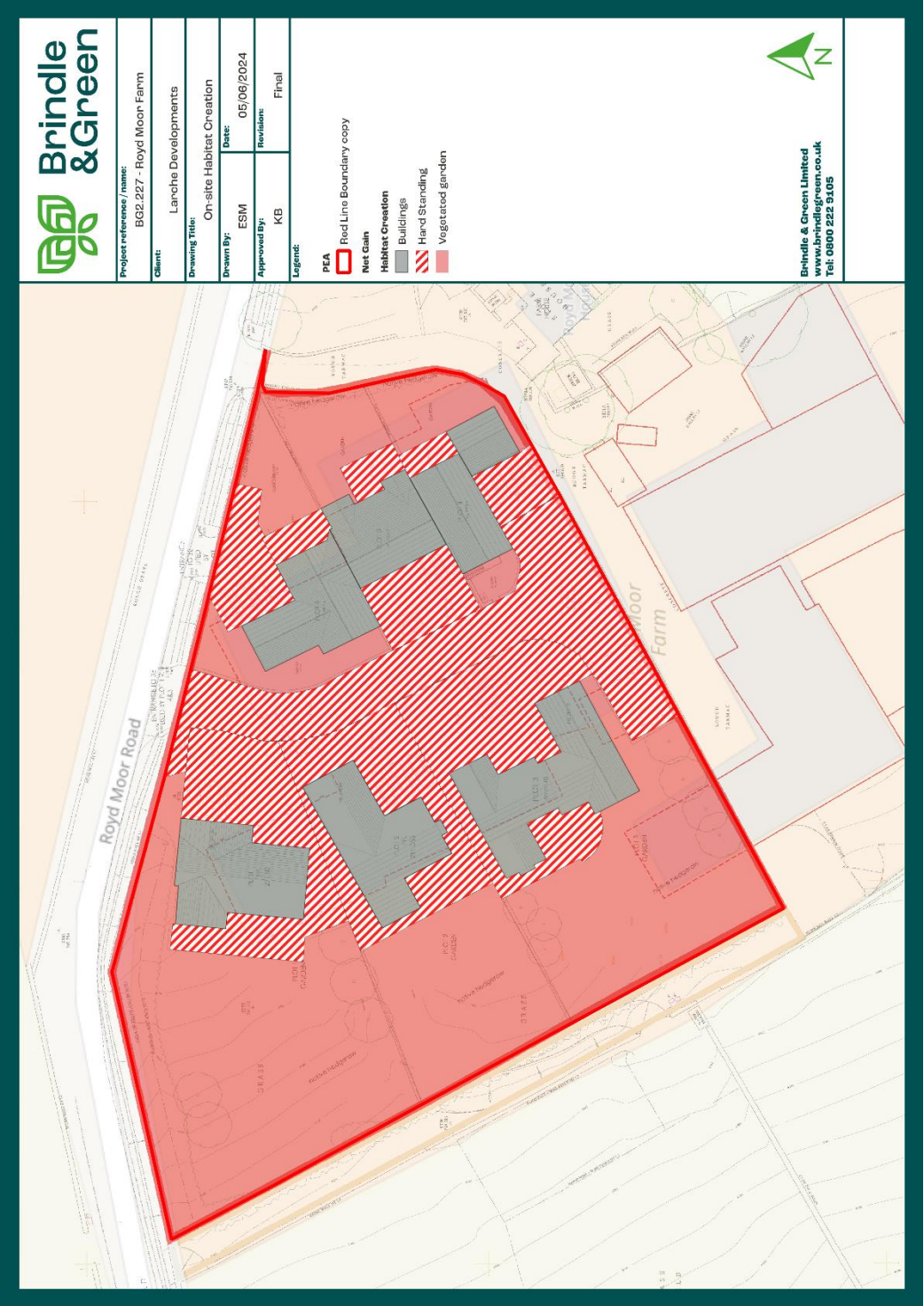
*Indicates target criteria

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Appendix 2. Existing Habitats



Appendix 3. Ecological Prescriptions



Appendix 5. References

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